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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,826	10/17/2003	Juergen Luebbe	TI-35437	2376
23494	7590	07/27/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			MCCLLOUD, RENATA D	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/688,826	<b>Applicant(s)</b> LUEBBE, JUERGEN	
	<b>Examiner</b> Renata McCloud	<b>Art Unit</b> 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 May 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5 and 8-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "sensing unit", "cancellation circuit", and the "generation unit" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show C21, C22, phase 1, phase 2, as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "23" has been used to designate "integrator amplifier" (see pg 10:10), "operational amplifier" (see pg 9:4), and "opamp" (see pg 9:17).
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "11" has been used to designate both "differential amplifier arrangement" (see pg. 8:10) and "BEMF amplifier" (see pg 10:9).
5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "13" has been used to designate both a "further circuit" (see pg 8:11), and the "TBEMF generation" (see pg 10:10).
6. Some of the characters in Figs 3-4 are too small and unclear to be read, such as the wording around the capacitors and the switches. For example in Fig. 3: the wordings around 22 and 21 are unclear. For example, in Fig. 4, 42A and 42B are unclear.

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Internal Reference, Output Driver, VCMP, VCMN, Sample, Samplez, Drive, Drivez, SimpleOp amp, INN, INP, TB, B, Calib, CalibZ, CaligEnZ, CalibEn.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Specification***

8. The disclosure is objected to because of the following informalities: on page 9, line 4, the term "2using" is unclear.

9. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The limitations "sensing unit", "generation unit" and "cancellation circuit" are not in the specification.

#### ***Claim Rejections - 35 USC § 112***

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 1-3, 5,8-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1: the specification does not disclose an integrator part including a cancellation circuit coupled with the sensing unit. In other words, it is not disclose that an integrator is formed of a cancellation circuit coupled to a sensing unit.

12. Claims 1-3, 5,8-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1: the specification does not disclose what the "cancellation circuit", or the "sensor unit" is, so it is not enabled how they are connected. It is also unclear how such a connection cancels the DC offset.

Claims 2: how the analog type response has a resolution free of ripple about the target voltage is not enabled.

Claims 3: how the compensation signal is characterized by a voltage step proportional with an infinite resolution approaching the target voltage over a constant time period is not enabled.

Claims 8: the specification does not disclose what the "cancellation circuit", or the "sensor unit" is, so it is not enabled how they are connected. It is also not enabled how such a connection determines the DC offset or cancels the DC offset.

Claim 9: it is not disclosed in the specification that the DC offset is determined prior to sensing the voltage.

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 1-3, 5,8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1: the last 4 lines of claim are indefinite. It is unclear what is operable for determining a DC offset. The last 4 lines read as if the integrator part is operable for determining a DC offset. Also since the specification does not disclose what the "cancellation circuit", or the "sensor unit" is, it is unclear how such a connection cancels the DC offset.

Claims 1-3, 5,8-10: For the reasons set forth in the 35 USC 112 first paragraph, the claims are also indefinite.

***Claim Rejections - 35 USC § 102***

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1-3,5,8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Brito et al (US 6040671).

**Claims 1:** an apparatus comprising a sensing unit (Fig. 4: 116) sensing a voltage corresponding to a voltage across the coil and providing a first signal indicative of the velocity; a generation circuit (Fig. 4: 92) providing a second signal indicative of a target voltage corresponding to a target velocity; and a controller (Fig. 4: 100/102/104) receiving the first signal and the second signal and determining a compensation signal characterized as an analog response to the target voltage and for effectuating the velocity (Col. 4:21-45); the controller includes a first node (Fig. 4: 98) for receiving the first signal (Fig. 4: signal from 116) and the second signal (signal from 92) and determining a difference (98 takes the difference) there between and providing the difference to a proportional part (Fig. 4:100) and an integrator part (102); the integrator part (102) providing a third signal indicative of a mathematical integration of the difference and the proportional part (148) providing a fourth signal indicative of a multiple of the difference; and the controller (Fig. 4: 100/102/104) having a summing node (104) receiving the third signal and the fourth signal and responsive for

determining a summed signal which corresponds to the compensation signal (104 produces 106); the integrator part including a cancellation circuit (Fig. 6) coupled to the sensing unit (116) and operable for determining a dc offset and providing the dc offset to the integrator part (102) for the mathematical integration for canceling the dc offset from the compensation signal (Col. 8:11-50).

**Claim 2:** as best understood; the compensation signal is an analog response regulated to the target voltage with a resolution free of ripple about the target voltage (Fig. 6).

**Claim 3:** as best understood, the compensation signal is characterized by a voltage step proportional to an error with an infinite resolution approaching the target voltage over a time period (Col. 4:58-4:10, the compensation signal is a result of the error voltage).

**Claim 5:** the third signal (signal from 102) is a voltage signal characterized by a voltage step proportional to an error (the input to 102 is the error from 98).

**Claim 8:** as best understood, a cancellation circuit (Fig. 6) coupled to the sensing unit (116) and the integrator (102) and operable for determining a dc offset of the sensing unit and the integrator and providing the dc offset to the integrator part for the mathematical integration for canceling the dc offset from the compensation signal.

**Claim 9:** as best understood, the dc offset is determined prior to sensing the coil voltage (the offset is determined in Fig. 6).



**Claim 10:** an amplifier unit (Fig. 4:108) having an input for receiving the compensation signal and responsive for providing a corresponding current for application to the coil.

17. Claims 1-3,5,8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakatani et al (US 6388416).

**Claim 1:** an apparatus comprising a sensing unit (Fig. 33: 18) sensing a voltage corresponding to a voltage across the coil and providing a first signal indicative of the velocity; a generation circuit (Fig. 33: 19) providing a second signal indicative of a target voltage corresponding to a target velocity; and a controller (Fig. 33: 11) receiving the first signal and the second signal and determining a compensation signal characterized as an analog response to the target voltage and for effectuating the velocity; the controller includes a first node (Fig. 33: 10) for receiving the first signal (Fig. 33: signal from 18) and the second signal (signal from 19) and determining a difference therebetween and providing the difference to a proportional part (Fig. 33:11; Fig. 13A: 110) and an integrator part (Fig. 13A: 112); the integrator part (Fig. 13A: 112) providing a third signal indicative of a mathematical integration of the difference and the proportional part (Fig. 13A: 110) providing a fourth signal indicative of a multiple of the difference; and the controller (Fig. 33: 11) having a summing node (Fig. 13A: 114 ) receiving the third signal and the fourth signal and responsive for determining a summed signal which corresponds to the compensation signal (Fig. 13A: 114 sums 110 and 112); an integrator part including a cancellation circuit (Fig. 13A: 111) coupled to

the sensing unit (Fig. 33: 18) and operable for determining a dc offset and providing the dc offset to the integrator part (Fig. 13A: 112) for the mathematical integration for canceling the dc offset from the compensation signal.

**Claim 2:** as best understood, the compensation signal is an analog response regulated to the target voltage with a resolution free of ripple about the target voltage (Fig. 39).

**Claim 3:** as best understood, the compensation signal is characterized by a voltage step proportional to an error with an infinite resolution approaching the target voltage over a time period (Fig. 39).

**Claim 5:** the third signal (Fig. 13A: signal from 112) is a voltage signal characterized by a voltage step proportional to an error (the signal comes from the error data).

**Claim 8:** as best understood, a cancellation circuit (Fig. 13A: 111) coupled to the sensing unit (fig. 33:18) and the integrator (fig. 13A: 112) and operable for determining a dc offset of the sensing unit and the integrator and providing the dc offset to the integrator part for the mathematical integration for canceling the dc offset from the compensation signal.

**Claim 9:** as best understood, the dc offset is determined prior to sensing the coil voltage (Fig. 13A: 111).

**Claim 10:** an amplifier unit (Fig. 19: 204) having an input for receiving the compensation signal and responsive for providing a corresponding current for application to the coil.

### ***Response to Arguments***

18. Applicant's arguments filed 07/21/2005 have been fully considered but they are not persuasive.

In response to applicant's arguments for the drawings and specification, the limitations "sensing unit", "generation unit" and "cancellation circuit" are not in the specification. For example, item (11) which applicant argues is the sensing unit, is referred to in the specification as a "differential amplifier arrangement" (see pg 8:10) and a "BEMF amplifier" (see pg 10:10). The specification neither refers to the limitation "sensing unit" or references item (11) as a being a "sensing unit" and therefore lacks antecedent basis. Applicant argues that item (23) is an integrator unit. The examiner assumes that applicant meant to argue that (23) is the "cancellation circuit" being that the examiner did not object to an "integrator". However, item (23) is described in the specification as being an "integrator amplifier" (see pg 10:10), "operational amplifier" (see pg 9:4), and "opamp" (see pg 9:17). The specification neither refers to the limitation "cancellation circuit" or references item (23) as being a "cancellation circuit" and therefore lacks antecedent basis. Applicant argues that item (13) is a generation unit, however, item (13) is described in the specification as being a "further circuit" (see pg 8:11), and the "TBEMF generation" (see pg 10:10). The specification neither refers to the limitation "generation unit" or references item (13) as being a "generation unit", and therefore lacks antecedent basis. 37 CFR 1.175(d) (1) states that "the claim or claims must conform to the invention as set forth in the remainder of the specification

and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description" (also see MPEP 608.01(o)).

In response to applicant's argument that Brito does not disclose a cancellation circuit coupled to the sensing unit and operable for canceling the dc offset, Brito discloses four switches 196, 198, 212, 218, a capacitor 194, and opamp 214. Applicant discloses, referring to page 9 lines 1-5, switches 24A, 25B, 26A, and 26B, capacitor 21, and an opamp that is attempting to regulate the differential voltage to 0. When the reference relied on expressly anticipates or makes obvious all of the elements of the claimed invention, the reference is presumed to be operable. Once such a reference is found, the burden is on applicant to provide facts rebutting the presumption of operability. In re Sasse, 629 F.2d 675, 207 USPQ 107 (CCPA 1980). Also it is unclear what the cancellation circuit or the sensing unit is. The specification does not disclose what the "cancellation circuit", or the "sensor unit" is, so it is indefinite and not enabled how they are connected. It is also not enabled how such a connection determines the DC offset or cancels the DC offset. Therefore the claim limitations, as best understood by the examiner, are met by Brito et al.

In response to applicant's argument that Nakatani does not disclose an integration part canceling the dc offset because the offset value 110 is not provided to the integrator 112, Nakatani discloses an error signal (Fig. 13A: error data) that is provided to the integrator (Fig. 13a:112; see col. 26-20-32). The specification does not disclose what the "cancellation circuit", or the "sensor unit" is, so it is indefinite and not

enabled how they are connected. It is also not enabled how such a connection determines the DC offset or cancels the DC offset. Therefore the claim limitations, as best understood by the examiner, are met by Nakatani et al.

### ***Conclusion***

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

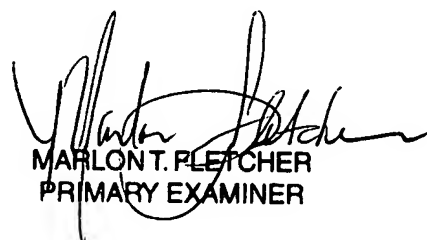
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 8 am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2800 ext. 4. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Renata McCloud  
Examiner  
Art Unit 2837

RDM



MARLON T. FLETCHER  
PRIMARY EXAMINER